



U.S. ENVIRONMENTAL PROTECTION AGENCY

Office of Pesticide Programs  
Registration Division (7505P)  
1200 Pennsylvania Ave., N.W.  
Washington, D.C. 20460

EPA Reg. Number:

70506-335

Date of Issuance:

10/31/17

NOTICE OF PESTICIDE:

☒ Registration  
☐ Reregistration  
(under FIFRA, as amended)

Term of Issuance:

Conditional

Name of Pesticide Product:

**Moccasin MTZ Herbicide**

Name and Address of Registrant (include ZIP Code):

Rebecca Clemmer  
Regulator Manager  
United Phosphorus, Inc.  
630 Freedom Business Center, Suite 402  
King of Prussia, PA 19406

**Note:** Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).

Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA section 3(c)(7)(A). You must comply with the following conditions:

1. Submit and/or cite all data required for registration/reregistration/registration review of your product under FIFRA when the Agency requires all registrants of similar products to submit such data.

*Continued on page 2*

Signature of Approving Official:

Kathryn V. Montague, Product Manager 23  
Herbicides Branch, Registration Division (7505P)

Date:

10/31/17

2. You are required to comply with the data requirements described in the GDCI and EDSP Orders identified below:
  - a. Metribuzin EDSP-101101-1304
  - b. S-metolachlor GDCI-108800-1508

You must comply with all of the data requirements within the established deadlines. If you have questions about the Generic DCI or EDSP Order listed above, you may contact the Chemical Review Manager in the Pesticide Re-evaluation Division:

<http://iaspub.epa.gov/apex/pesticides/f?p=chemicalsearch:1>

3. The data requirements for storage stability and corrosion characteristics (Guidelines 830.6317 and 830.6320) are not satisfied. A one-year study is required to satisfy these data requirements. You have 18 months from the date of registration to provide these data.
4. Submit one copy of the final printed label for the record before you release the product for shipment.

Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under FIFRA and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance.

If you fail to satisfy these data requirements, EPA will consider appropriate regulatory action including, among other things, cancellation under FIFRA section 6(e). Your release for shipment of the product constitutes acceptance of these conditions. A stamped copy of the label is enclosed for your records. Please also note that the record for this product currently contains the following CSF:

- Basic CSF dated 12/09/2016

If you have any questions, please contact Mindy Ondish by phone at 703-605-0723, or via email at [ondish.mindy@epa.gov](mailto:ondish.mindy@epa.gov).

Enclosure

**ACCEPTED**

10/31/2017

Under the Federal Insecticide, Fungicide  
and Rodenticide Act as amended, for the  
pesticide registered under  
EPA Reg. No.

70506-335

**GROUP****15****5****HERBICIDES****MOCCASIN™ MTZ Herbicide**For control of certain grasses and broadleaf weeds in field corn,  
potatoes, soybeans, and tomatoes**SALE, USE AND DISTRIBUTION OF THIS PRODUCT IN NASSAU AND SUFFOLK COUNTIES IN THE  
STATE OF NEW YORK IS PROHIBITED****Active Ingredients:**

S-metolachlor (CAS No. 87392-12-9) ..... 38.94 %

Metribuzin (CAS No. 21087-64-9) ..... 12.98 %

**Other Ingredients\*** ..... 48.08 %**Total:** ..... 100.0%

Contains 3.35 lbs. of S-metolachlor and 1.116 lbs. of metribuzin per gallon. This represents a ratio of 3:1, S-metolachlor:metribuzin.

\*Contains approximately 37% petroleum distillates.

**KEEP OUT OF REACH OF CHILDREN****CAUTION****FIRST AID**

<b>If swallowed</b>	<ul style="list-style-type: none"> <li>• Immediately call a poison control center or doctor.</li> <li>• Do not induce vomiting unless told to by a poison control center or doctor.</li> <li>• Do not give any liquid to the person.</li> <li>• Do not give anything to an unconscious person.</li> </ul>
<b>If in eyes</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If on skin or clothing</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If inhaled</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>

**NOTE TO PHYSICIAN**

May pose an aspiration pneumonia hazard. Contains petroleum distillate.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For medical treatment, call the Rocky Mountain Poison and Drug Center at 1-866-673-6671.

**FOR CHEMICAL EMERGENCY: Spill, leak, fire, exposure, or accident,  
call CHEMTREC 1-800-424-9300.**United Phosphorus, Inc.  
630 Freedom Business Center, Suite 402  
King of Prussia, PA 19406EPA Reg. No. 70506-335  
EPA Est.  
Net Contents

## PRECAUTIONARY STATEMENTS

### Hazards to Humans and Domestic Animals

#### CAUTION

Contains petroleum distillate. Harmful if swallowed or absorbed through skin. Causes moderate eye irritation. Avoid contact with eyes, skin, or clothing.

#### Personal Protective Equipment (PPE)

**Applicators and other handlers must wear:**

- Long-sleeved shirt and long pants
- Chemical-resistant gloves, such as barrier laminate or Viton® ≥ 14 mils
- Shoes plus socks

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

#### User Safety Recommendations

**Users should:**

- Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

#### Environmental Hazards

Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment wash water or rinsate.

#### Ground Water Advisory

S-metolachlor, one of the active ingredients in this product, is known to leach through soil into ground water under certain conditions as a result of label use. This chemical may leach into ground water if used in areas where soils are permeable, particularly where the water table is shallow. Metribuzin, the other active ingredient in this product, is a chemical which can travel (seep or leach) through soil and can contaminate ground water which may be used as drinking water. Metribuzin has been found in ground water as a result of agricultural use. Users are advised not to apply metribuzin where the water table (ground water) is close to the surface and where the soils are very permeable, i.e., well-drained soils such as loamy sands. Your local agricultural agencies can provide further information on the type of soil in your area and the location of ground water.

#### Surface Water Advisory

S-metolachlor has the potential to contaminate surface water through ground spray drift. Under some conditions, S-metolachlor may also have a high potential for runoff into surface water (primarily via dissolution in runoff water) for several months post-application. These include poorly draining or wet soils with readily visible slopes toward adjacent surface waters, frequently flooded areas, areas overlaying extremely shallow ground water, areas with in-field canals or ditches that drain to surface water, areas not separated from adjacent surface waters with vegetated filter strips, and areas overlaying tile drainage systems that drain to surface water.

## Mixing/Loading Instructions

Care must be taken when using this product to prevent back-siphoning into wells, spills, or improper disposal of excess pesticide, spray mixtures, or rinsates.

Check-valves or anti-siphoning devices must be used on all mixing and/or irrigation equipment.

This product must not be mixed or loaded within 50 ft. of perennial or intermittent streams and rivers, natural or impounded lakes and reservoirs. This product must not be mixed/loaded or used within 50 ft. of all wells, including abandoned wells, drainage wells, and sink holes. Operations that involve mixing, loading, rinsing, or washing of this product into or from pesticide handling or application equipment or containers within 50 ft. of any well are prohibited, unless conducted on an impervious pad constructed to withstand the weight of the heaviest load that may be positioned on or moved across the pad. Such a pad shall be designed and maintained to contain any product spills or equipment leaks, container or equipment rinse or wash water, and rain water that may fall on the pad. Surface water shall not be allowed to either flow over or from the pad, which means the pad must be self-contained. The pad shall be sloped to facilitate material removal. An unroofed pad shall be of sufficient capacity to contain at a minimum 110% of the capacity of the largest pesticide container or application equipment on the pad. A pad that is covered by a roof of sufficient size to completely exclude precipitation from contact with the pad shall have a minimum containment capacity of 100% of the capacity of the largest pesticide container or application equipment on the pad. Containment capacities as described above shall be maintained at all times. The above-specified minimum containment capacities do not apply to vehicles when delivering pesticide shipments to the mixing/loading site.

## DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

### AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

**Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 24 hours.** Exception: If the product is soil-injected or soil-incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

For early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, wear:

- Coveralls
- Chemical-resistant gloves, such as nitrile, butyl, neoprene and/or barrier laminate  $\geq$  14 mils
- Shoes plus socks

Sale, use and distribution of this product in Nassau and Suffolk Counties in the State of New York is prohibited.

FAILURE TO FOLLOW THE DIRECTIONS FOR USE AND PRECAUTIONS ON THIS LABEL MAY RESULT IN POOR WEED CONTROL, CROP INJURY, OR ILLEGAL RESIDUES.

## PRODUCT INFORMATION

Moccasin MTZ is a soil applied, pre-emergent herbicide containing two active ingredients with different modes of action, which assists in the management of herbicide resistance.

Observe all precautions and limitations on the labels of each product used in tank mixtures. Tank mixture partners must be registered in states where they are used. It is the pesticide user's responsibility to ensure that all products in the listed mixtures are registered for the intended use(s). Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

Do not apply under conditions which favor runoff or wind erosion of soil containing this product to non-target areas.

To prevent off-site movement due to runoff or wind erosion:

- Avoid treating powdery dry or light sand soils when conditions are favorable for wind erosion. Under these conditions, settle the soil surface first by rainfall or irrigation.
- Do not apply to impervious substrates, such as paved or highly compacted surfaces.
- Do not use tailwater from the first flood or furrow irrigation of treated fields to treat non-target crops, unless at least 1/2 inch of rainfall has occurred between application and the first irrigation.

## Mixing Instructions

Prepare no more spray mixture than is needed for the immediate operation. Thoroughly clean the spray equipment before using MOCCASIN MTZ. Vigorous agitation is necessary to maintain uniformity of the spray mixture. Maintain maximum agitation throughout the spraying operation. Do not allow spray mixture to stand overnight in the spray tank. Flush the spray equipment thoroughly following each use and apply the rinsate to a previously treated area.

**Ground Application:** Apply MOCCASIN MTZ alone or in tank mixtures by ground equipment in a minimum of 10 gallons of spray mixture per acre, unless otherwise specified.

Use sprayers that provide accurate and uniform application. Calibrate the sprayer before use at the beginning of the season. For MOCCASIN MTZ tank mixtures with wettable powder or dry flowable formulations, screens and strainers should be no finer than 50-mesh.

Calculate the amount of herbicide needed for band treatment by the formula:

Band width in inches X broadcast rate per acre = amount needed per acre of field  
Row width in inches

## Activation

In order to activate MOCCASIN MTZ a small amount of rainfall or irrigation is required following application. In areas of low rainfall, follow Pre-emergence application by light irrigation of 1/4 to 1/2 inch of water. Do not apply heavy irrigation immediately after application. As with many surface-applied herbicides, weed control and crop tolerance may vary with rainfall and/or soil texture.

## Application in Water or Fluid Fertilizers

**MOCCASIN MTZ Alone:** Add 1/3 of the required amount of water or fluid fertilizer to the spray or mixing tank. With the agitator running, add MOCCASIN MTZ into the spray tank. Continue agitation while adding the remainder of the water or fluid fertilizer. Begin application of the spray solution after the MOCCASIN MTZ has completely dispersed in the water or fluid fertilizer. Maintain agitation until all of the mixture has been applied.

**MOCCASIN MTZ + Tank Mixtures:** Add 1/3 of the required amount of water or fluid fertilizer to the mix tank. Start the agitator running before adding any tank mix partners. In general, add tank mix partners in this order: products packaged in water-soluble packaging, wettable powders, wettable granules (dry flowables), liquid flowables, liquids such as MOCCASIN MTZ, and emulsifiable concentrates. Always allow each tank mix partner to become fully dispersed before adding the next product. Provide sufficient agitation while adding the remainder of the water. Maintain agitation until all of the mixture has been applied.



(1) When using MOCCASIN MTZ in tank mixtures, add all products in water-soluble packaging to the tank and mixed with plain water before any other tank mix partner, including MOCCASIN MTZ. Allow the water-soluble packaging to completely dissolve and the product(s) to completely disperse before adding any other tank mix partner to the tank. (2) Water-soluble packets will not properly dissolve in most spray solutions that contain fluid fertilizers.

If using MOCCASIN MTZ in a tank mixture, observe all directions for use, crop/sites, use rates, dilution ratios, restrictions, precautions, and limitations that appear on the tank mix product label. Do not exceed any label dosage rate, and the most restrictive label precautions and limitations must be followed.

MOCCASIN MTZ is compatible with most common tank mix partners. However, it is best to test its physical compatibility with tank mix partners before use. To determine the physical compatibility of MOCCASIN MTZ with other products, use a jar/compatibility test, as described below.

## Compatibility Test

Conduct a jar test before tank mixing to ensure compatibility of MOCCASIN MTZ with other pesticides. The following test assumes a spray volume of 25 gal./A. For other spray volumes, make appropriate changes in the ingredients.

**Note:** Nitrogen solutions or complete fluid fertilizers may replace all or part of the water in the spray. Because liquid fertilizers vary, even within the same analysis, **always check compatibility with pesticide(s) before use.** Incompatibility of tank mixtures is more common with suspensions of fertilizer and pesticides.

## Test Procedure

Add 1.0 pt. of carrier (fertilizer or water) to each of 2 one qt. jars with tight lids. Note: Use the same source of water that will be used for the tank mix and conduct the test at the temperature the tank mix will be applied.

To one of the jars, add 1/4 tsp. or 1.2 milliliters of a compatibility agent approved for this use, such as Compex® or Unite® (1/4 tsp. is equivalent to 2.0 pt./100 gal. spray). Shake or stir gently to mix.

To both jars, add the appropriate amount of pesticide(s) in their relative proportions based on label rates. If more than one pesticide is used, add them separately with dry pesticides first, flowables next, and emulsifiable concentrates last. After each addition, shake or stir gently to thoroughly mix.

After adding all ingredients, put lids on and tighten, and invert each jar ten times to mix. Let the mixtures stand 15-30 minutes and then look for separation, large flakes, precipitates, gels, heavy oily film on the jar, or other signs of incompatibility. Determine if the compatibility agent is needed in the spray mixture by comparing the two jars. If either mixture separates, but can be remixed readily, the mixture can be sprayed as long as good agitation is used. If the mixtures are incompatible, test the following methods of improving compatibility: (a) Slurry the dry pesticide(s) in water before addition, or (b) add 1/2 the compatibility agent to the fertilizer or water and the other 1/2 to the emulsifiable concentrate or flowable pesticide before addition to the mixture. If incompatibility is still observed, do not use the mixture.

After compatibility testing is complete, dispose of any pesticide wastes in accordance with the **Storage and Disposal** section in this label.

## Center Pivot Irrigation Application

If applying through chemigation, apply this product only through a center pivot irrigation system. Do not apply this product through any other type of irrigation system. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water. If you have questions about calibration, contact State Extension specialists, equipment manufacturers, or other experts. Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system, unless the pesticide label-prescribed safety devices for public water systems are in place. A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments if the need arises.

## Operating Instructions

- The system must contain a functional check-valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water-source contamination from backflow.
- The pesticide injection pipeline must contain a functional, automatic, quick-closing check-valve to prevent the flow of fluid back toward the injection pump.
- The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
- Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump or piston pump), effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
- Do not apply when wind speed favors drift beyond the area intended for treatment.
- Prepare a mixture with a minimum of 1 part water to 1 part herbicide(s) and inject this mixture into the center pivot system. Injecting a larger volume of a more dilute mixture per hour will usually provide more accurate calibration of metering equipment. Maintain sufficient agitation to keep the herbicide in suspension.
- Meter into irrigation water during entire period of water application.
- Apply in 1/2-1 inch of water. Use the lower water volume (1/2 inch) on *coarse-textured soils* and the higher volume (1 inch) on *fine-textured soils*. More than 1 inch of water at application may reduce weed control by moving the herbicide below the effective zone in the soil.

**Precaution for center pivot applications:** Where sprinkler distribution patterns do not overlap sufficiently, unacceptable weed control may result. Where sprinkler distribution patterns overlap excessively, crop injury may result.

**Aerial Application (except where prohibited by label directions):** Apply MOCCASIN MTZ in water using a minimum spray volume of 2 gal./A. Avoid application under conditions where uniform coverage cannot be obtained or where excessive spray drift may occur. Make applications at a maximum height of 10 ft. above the crop with low-drift nozzles at a maximum pressure of 40 psi. Do not apply when wind speed is greater than 10 mph.

Avoid application to humans or animals. Flagmen and loaders must avoid inhalation of spray mist and prolonged contact with skin.

## Aerial Drift Management

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment- and weather-related factors determines the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses, or to applications using dry formulations.

1. The distance of the outermost nozzles on the boom must not exceed 3/4 the length of the wing-span or rotor.
2. Nozzles must always point backward parallel with the air stream and never be pointed down-ward more than 45 degrees.

Where states have more stringent regulations, they must be observed.

The applicator must be familiar with and take into account the information covered in the **Spray Drift Management** section below.



## Spray Drift Management

### Information on Droplet Size

The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see **Wind, Temperature and Humidity**, and **Temperature Inversions**).

### Controlling Droplet Size

- **Volume** – Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** – Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types, lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- **Number of nozzles** – Use the minimum number of nozzles that provide uniform coverage.
- **Nozzle Orientation** – Orienting nozzles so that the spray is released parallel to the air stream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- **Nozzle Type** – Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

### Boom Length

For some use patterns, reducing the effective boom length to less than 3/4 of the wingspan or rotor length may further reduce drift without reducing swath width.

### Application Height

Apply at a height not greater than 10 ft. above the top of the largest plants, unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

### Swath Adjustment

When applications are made with a crosswind, the swath will be displaced downward. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase with increasing drift potential (higher wind, smaller drops, etc.).

### Wind

Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given speed. Avoid application below 2 mph due to variable wind direction and high inversion potential. Note: Local terrain can influence wind patterns. Every applicator must be familiar with local wind patterns and how they affect spray drift.

### Temperature and Humidity

When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

### Temperature Inversions

Do not apply during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited

cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

### **Sensitive Areas**

Apply MOCCASIN MTZ only when the potential for drift to adjacent sensitive areas (e.g., residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g., when wind is blowing away from the sensitive areas).

Avoid application to humans or animals. Flagmen and loaders must avoid inhalation of spray mist and prolonged contact with skin.

### **Weed Resistance Management**

Moccasin MTZ Herbicide contains the active ingredient S-metolachlor which inhibits the formation of very long chain fatty acids (VLCFA, Site of Action Group 15). Some naturally occurring weed populations have been identified as resistant to Group 15 herbicides. Selection of resistant biotypes, through repeated use of these herbicides or lower than specified use rates in the same field, may result in weed control failures. A resistant biotype may be present where poor performance cannot be attributed to adverse environmental conditions or improper application methods. If resistance is suspected, contact your local UPI representative and/or agricultural advisor for assistance.

Follow the general principles of herbicide resistant weed management applicable to all herbicide products:

- Employ integrated weed management practices. Use multiple herbicide sites of action with overlapping weed spectrums in rotation, sequences, or mixtures.
- Use the full herbicide rate and proper application timing for the hardest to control weed species present in the field.
- Scout fields after herbicide application to ensure control has been achieved. Avoid allowing weeds to reproduce by seed or to proliferate vegetatively.
- Monitor site and clean equipment between sites.
- Start with a clean field and control weeds early by using a burndown treatment or tillage in combination with a preemergence residual herbicide as appropriate.
- Use cultural practices such as cultivation and crop rotation, where appropriate.
- Use good agronomic principles that enhance crop competitiveness.

### **Cleaning Equipment After Application**

Because some non-labeled crops are sensitive to low rates of MOCCASIN MTZ, special attention must be given to cleaning equipment before spraying crops other than those registered for use and on this label. Mix only as much spray solution as needed. Immediately after spraying, clean equipment thoroughly using the following procedure:

1. Flush tank, hoses, boom, and nozzles with clean water.
2. Prepare a cleaning solution of one gal. of household ammonia per 50 gal. of water. Many commercial spray tank cleaners may be used as well. Consult your United Phosphorus, Inc. representative for a partial listing of approved tank cleaners and more information about proper tank cleaning procedures. Do not use chlorine-based cleaners such as Clorox®.
3. When available, use a pressure washer to clean the inside of the spray tank with this solution. Take care to wash all parts of the tank, including the inside top surface. Completely fill the sprayer with the cleaning solution to ensure contact of the cleaning solution with all internal surfaces of the tank and plumbing. Start agitation in the sprayer and thoroughly re-circulate the cleaning solution for at least 15 minutes. All visible deposits must be removed from the spraying system.
4. Flush hoses, spray lines, and nozzles for at least one minute with the cleaning solution.

5. Dispose of rinsate in a manner approved by Federal, state, and/or local authorities.
6. Repeat steps 2-5.
7. Remove nozzles, screens, and strainers and clean separately in the ammonia cleaning solution after completing the above procedures.
8. Rinse the complete spraying system with clean water.

## Impregnation Onto Dry Bulk Granular Fertilizers

Dry bulk granular fertilizers may be impregnated or coated with MOCCASIN MTZ. For applications of MOCCASIN MTZ with dry bulk fertilizers, directions for use and precautions on the MOCCASIN MTZ label must be followed as they relate to factors such as target crops, rates per acre, soil texture, application methods, and rotational crops.

The individual and/or company selling the herbicide/fertilizer mixture is/are responsible for compliance with all state regulations relating to dry bulk granular fertilizer blending, registration, labeling, and application..

The herbicide/fertilizer mixture can be prepared using any closed drum, belt, ribbon, or other commonly used dry bulk fertilizer blender. Nozzles used to spray MOCCASIN MTZ onto the fertilizer must be spaced to provide uniform spray coverage. Take care to aim the spray onto the fertilizer only, avoiding the walls of the blender.

If the herbicide/fertilizer mixture is too wet, a highly absorptive material, such as Agsorb® FG or Celatom MP-79®, or similar granular clay or diatomaceous earth materials, should be added to obtain a dry, free-flowing mixture. Add absorptive materials only after the herbicide has been thoroughly blended into the fertilizer mixture. Best application results will be obtained by using a granule of 6/30 particle size or of a size similar to that of the fertilizer materials being used. Generally, less than 2% by weight of absorptive material will be needed. Avoid using more than 5% absorptive material by weight.

Calculate the amount of MOCCASIN MTZ to be used by the following formula:

$$\frac{2,000}{\text{lbs. of fertilizer per acre}} \times \frac{\text{pt. of MOCCASIN MTZ}}{\text{per acre}} = \frac{\text{pt. of MOCCASIN MTZ}}{\text{per ton of fertilizer}}$$

## Pneumatic (Compressed Air) Application

High humidity, high urea concentrations, low fertilizer use rates, and dusty fertilizer may cause fertilizer mixtures to build up or plug the distributor head, air tubes, or nozzle deflector plates. To minimize buildup, premix MOCCASIN MTZ with Exxon Aromatic 200 at a rate of 2.0-2.5 pt./gal. of MOCCASIN MTZ. Aromatic 200 is a noncombustible/nonflammable petroleum product. Aromatic 200 may be used in either a fertilizer blender or through direct injection systems. Drying agents should not be used when using Aromatic 200.

When impregnating MOCCASIN MTZ in a blender before application, a drier mixture can be obtained by substituting a drying agent for Aromatic 200. The use of Agsorb FG or another drying agent of 6/30 particle size is recommended.

### Precautions

- Mixtures of MOCCASIN MTZ and Aromatic 200 must be used on dry fertilizer only. Poor results or crop injury may result if these mixtures are used in water or liquid fertilizer solutions for spraying applications.
- Drying agents are not recommended for use with On-The-Go impregnation equipment.

**Restrictions:** To avoid potential for explosion,

- Do not impregnate MOCCASIN MTZ on ammonium nitrate, potassium nitrate, or sodium nitrate, either alone or in blends with other fertilizers.
- Do not combine MOCCASIN MTZ with a single superphosphate (1-20-0) or triple superphosphate (0-46-0).
- Do not use MOCCASIN MTZ on straight limestone, since absorption will not be achieved. Fertilizer blends containing limestone can be impregnated.

## Application of Impregnated Dry Bulk Granular Fertilizer

Apply 200-450 lb. of the herbicide/fertilizer mixture per acre. For best results, apply the mixture uniformly to the soil with properly calibrated equipment immediately after blending. Uniform application of the herbicide/fertilizer mixture is essential in order to prevent possible crop injury to subsequent rotational crops. Unsatisfactory weed control may result from non-uniform application. In areas where conventional tillage is practiced, shallow-incorporate the mixture into the soil to obtain satisfactory weed control. On fine- or medium-textured soils in areas where soil incorporation is not planned, i.e., reduced-tillage situations or in some conventional till situations, make applications approximately 30 days before planting to allow moisture to move the herbicide/fertilizer mixture into the soil. On coarse-textured soils, make applications approximately 14 days prior to planting.

### Precautions

To help avoid rotational crop injury, make applications as early as possible, since MOCCASIN MTZ impregnated onto dry bulk fertilizers can be expected to last longer in the soil than MOCCASIN MTZ applied as a spray in water or fluid fertilizer.

## Crop Rotation Intervals

Rotational Interval After Application of MOCCASIN MTZ <sup>1</sup>				
4 months	4 1/2 Months	8 Months	12 Months	18 Months
Corn	Winter Barley* Winter Wheat* Alfalfa	Peas Rice** Spring Barley Spring Wheat	Asparagus Forage Grasses Lentils Sainfoin Sugarcane Tomatoes	Onions Sugar Beets and Other Root Crops Other Crops not Listed on This Label

<sup>1</sup> Crop rotation intervals in this chart do not include restrictions for the tank mix partner. Refer to the label of the other product for additional restrictions

\*Only when following soybeans; otherwise 8 months

\*\* Do not rotate rice after any application to a primary crop at greater than 7.25 pints of MOCCASIN MTZ per season.

### General Notes:

Refer to the specific crop use sections for additional crop rotation precautions.

Cover crops for soil building or erosion control may be planted any time, but do not graze or harvest for food or feed. Stand reductions may occur in some areas.

### Replanting

If replanting is necessary in fields previously treated with MOCCASIN MTZ, the field may be replanted to soybeans or potatoes. Before replanting, refer to the specific crop use sections for precautions and restrictions.

## WEEDS CONTROLLED AND/OR SUPPRESSED BY MOCCASIN MTZ

### Annual Broadleaf Weeds Controlled\* by Moccasin MTZ

Anoda, spurred	Lambsquarters, common	Redweed
Beggarweed, Florida	Lettuce, prickly	Sesbania species
Carpetweed	Mallow, Venice	Shepherdspurse
Chickweed, common	Mustard species	Sicklepod
Copperleaf, hophornbeam	Nightshade, black	Side, prickly/teaweed
Galinsoga species	Pennycress, field	Smartweed, Pennsylvania
Henbit	Pepperweed, Virginia	Spurge, spotted
Jimsonweed	Pigweed species	Spurge, bristly
Knotweed species	Purslane, common	Thistle, Russian
Kochia	Pusley, Florida	Waterhemp species
Ladysthumb		

### Broadleaf Weeds suppressed\*\* by Moccasin MTZ

Cocklebur	Ragweed, common	Velvetleaf
Nightshade, hairy	Sunflower, common	

### Annual Grasses & Sedges controlled\* by Moccasin MTZ

Barnyardgrass	Cupgrass, southwestern	Signalgrass, broadleaf
Bluegrass, annual	Foxtail species	Witchgrass
Crabgrass species	Goosegrass	
Crowfootgrass	Junglerice	
Cupgrass, prairie	Panicum, fall	

### Grasses suppressed\*\* by Moccasin MTZ

Johnsongrass, seedling	Sandbur	Shattercane
Panicum, Texas		

\* Triazine resistant broadleaf and grass biotypes will not be controlled by Moccasin MTZ

\*\* Suppression indicates herbicidal activity, however possible below the level of control considered acceptable for commercial weed control

## CORN (FIELD)

Only for use in the following States: Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, Ohio, South Dakota and Wisconsin.

Apply MOCCASIN MTZ pre-plant and pre-emergence for residual control of certain broadleaf and grass species in field corn.

### Pre-plant and Pre-emergence Applications

Apply with ground or aerial spray equipment which is capable of making a uniform broadcast application prior to corn emergence from the soil.

**MOCCASIN MTZ Pre-plant and Pre-emergence Use Rates in Field Corn**

States	Application Timing	MOCCASIN MTZ Pints/Acre
Iowa, Kansas, Missouri, Nebraska, South Dakota	Pre-plant 0 to 30 Days	1.33-1.8
	Pre-emergence	
Illinois, Indiana, Kentucky, Michigan, Minnesota, Ohio, Wisconsin	Pre-plant 10 to 30 Days	1.33-1.8
	Pre-plant 0 to 9 Days	1.33
	Pre-emergence	

**Precautions:**

- Plant corn seed a minimum of 1-1/2 inches deep.
- Reduced weed control may result if MOCCASIN MTZ is used on muck soils.
- For heavy weed infestations and/or early pre-plant applications use the higher rates of MOCCASIN MTZ.
- Observe all precautions and limitations on labelling of all products used in tank mixes.
- Some corn varieties may be sensitive to metribuzin (an active ingredient in Moccasin MTZ). Consult the seed supplier for information on tolerance to metribuzin.

**Restrictions:**

- Do not apply on sweet corn, popcorn, white corn, or corn grown for seed.
- Do not apply more than 1.8 pints per acre of MOCCASIN MTZ (0.25 pound ai metribuzin/0.75 lb ai s-metolachlor) per growing season.
- Do not apply more than 1.33 pints per acre per growing season on soils with less than 2.0% organic matter.
- Do not apply on soils having pH 7.0 or greater.
- Do not apply on coarse textured soils with less than 1.5% organic matter.
- Do not graze or feed forage for 30 days after application.
- Do not harvest for silage or grain within 60 days of the last MOCCASIN MTZ application. For tank mixes, follow the most restrictive preharvest interval of all products used.

**Post-emergence Applications**

Apply with ground or aerial spray equipment which is capable of making a uniform broadcast application. Apply MOCCASIN MTZ at 1.8 pints per acre to field corn after crop emergence until just prior to tasseling.

**Precautions:**

- Observe all precautions and limitations on labeling of all products used in tank mixtures.

**Restrictions:**

- Do not apply more than 1.8 pints per acre of MOCCASIN MTZ (0.25 lb ai metribuzin/0.75 lb ai s-metolachlor) per growing season.
- Do not apply on corn grown for seed, sweet corn, popcorn, or white corn.
- Do not apply when field corn is under stress.
- Do not apply by air if sensitive crops or plants are growing in the vicinity of the area to be treated.
- Do not allow spray drift onto sensitive crops or plants.
- Do not use on sand, loamy sand or sandy loam soils that have less than 0.5% organic matter.
- Do not graze or feed forage for 30 days after application.
- Do not harvest for silage or grain within 60 days of the last MOCCASIN MTZ application. For tank mixes, follow the most restrictive preharvest interval of all products used.



## POTATOES (EXCEPT CALIFORNIA)

Apply MOCCASIN MTZ for pre-emergence weed control prior to or after potato emergence. MOCCASIN MTZ has some post-emergence activity on weeds, but the consistency and spectrum of weed control is much better pre-emergence to weeds.

The application rates for MOCCASIN MTZ for use in potatoes are provided below. Where a rate range is given, use the lower end of the rate range on the more coarse-textured soils listed within that group and/or where weed pressures are known to be light; use the high end of the rate range on the more fine-textured soils listed within that group and/or where the weeds pressures are known to be heavy.

### Pre-emergence Applications

Apply with ground spray equipment, aerial spray equipment, or by center pivot irrigation equipment which is capable of making a uniform broadcast application. Apply after planting but before crop emergence, or apply after drag-off if this operation is part of the usual cultural practice.

#### MOCCASIN MTZ Pre-emergence Use Rates in Potatoes

Soil Texture	0.5 to 3% Organic Matter Pt./A	Over 3% Organic Matter Pt./A
<b>COARSE</b> <sup>1</sup> (Sand, loamy sand, sandy loam)	1.75-3.0	3.0-3.56
<b>MEDIUM or FINE</b> (Loam, silt loam, silt, sandy clay, sandy clay loam, silty clay, silty clay loam, clay, clay loam)	2.67-3.56	3.56-4.56

<sup>1</sup> On soils that classify as a "sand" texture do not use more than 1.75 pt./A of MOCCASIN MTZ, or more than 0.5 lb. a.i./A of metribuzin in total, or crop injury may occur.

### Post-emergence Applications

Apply post-emergence only in center pivot irrigation water, after drag-off if that is a usual cultural practice, but not closer than 60 days before harvest. Refer to the "Center Pivot Irrigation Application" section of this label for application information.

#### MOCCASIN MTZ Post-emergence Use Rates in Potatoes (for application in center pivot irrigation water only)

Soil Texture	0.5% Organic Matter and Above Pt./A
<b>COARSE</b> <sup>1</sup> (Sand, loamy sand, sandy loam)	1.75
<b>MEDIUM or FINE</b> (Loam, silt loam, silt, sandy clay, sandy clay loam, silty clay, silty clay loam, clay, clay loam)	1.75-3.56

<sup>1</sup> Crop injury may occur on soils that classify as a "sand" texture and have less than 0.5% organic matter.

#### Precautions:

- To avoid crop injury, make post-emergence applications only on russeted or white skinned varieties of potatoes that are not early maturing. Avoid post-emergence applications on Atlantic, Bellchip, Centennial, Chipbelle, Shepody and Superior varieties. Pre-emergence applications on these varieties may cause crop injury under adverse weather conditions, on coarse soils, under high soil pH and with higher use rates.
- Potato varieties may vary in their response to a given herbicide application. When using MOCCASIN MTZ for the first time on a particular variety, always determine crop tolerance before using on a field-scale.

- The planting of sensitive crops such as lettuce, cole crops and cucurbits during the next growing season following application of MOCCASIN MTZ may result in injury to that crop.

**Restrictions:**

- Do not make more than two applications per year. Do not apply less than 7 days apart.
- Do not apply more than 7.12 pts MOCCASIN MTZ per acre per year (2.98 lbs-metolachlor + 1 lb metribuzin).
- Do not apply MOCCASIN MTZ to muck or peat soils.
- Do not apply MOCCASIN MTZ post-emergence if the weather in the next 3 days is predicted to be cool, wet or cloudy, as crop injury may occur.
- Do not harvest within 60 days of the last MOCCASIN MTZ application.
- Do not apply after June 30 in Idaho, Oregon, or Washington if the treated land will be planted to a crop other than potatoes in the fall.
- Do not apply MOCCASIN MTZ to sweet potatoes or yams.
- Do not apply MOCCASIN MTZ as a pre-plant incorporated application in potatoes.

**Tank Mixtures With Other Products Registered for Use in Potatoes**

For pre-emergence applications in potatoes, MOCCASIN MTZ may be tank mixed with other pesticide products registered for use in this way and timing in potatoes. Follow the directions for use, observe the stated precautions, and abide by the limitations and restrictions on the most restrictive of the product labels. If you have no previous experience mixing these products under your conditions, perform a compatibility test before attempting large-scale mixing (see the Compatibility Test section of this label).

For post-emergence applications (center pivot irrigation applications only), i.e. where potato vines are exposed, there may be increased risk of crop injury from certain product mixtures. At this application timing, tank mix MOCCASIN MTZ only with pesticide products which allow tank mixing and post-emergence chemigation on their product label. Follow the directions for use, observe the stated precautions, and abide by the limitations and restrictions on the most restrictive of the product labels.

## **SOYBEANS (EXCEPT CALIFORNIA)**

MOCCASIN MTZ may be applied pre-plant surface, pre-plant incorporated, pre-emergence, as a sequential application, or postemergence directed (see limitations) to control weeds listed on this label.

**Rate Ranges**

Where a rate range is shown, use a lower rate on soils that are coarse-textured and/or low in organic matter. Use a higher rate on soils that are relatively fine-textured and/or high in organic matter.

**Replanting**

If replanting is necessary in fields previously treated with MOCCASIN MTZ, the field may be replanted to soybeans. Excessive tillage will reduce residual weed control. Do not apply a second treatment as injury to soybeans may occur.

**Precautions**

Injury to soybeans or reduced weed control may occur when MOCCASIN MTZ is used under the following conditions; these conditions should be avoided wherever possible.

- When soils have a calcareous surface area or a pH of 7.5 or higher.
- When applied in conjunction with soil-applied organic phosphate pesticides.

- Uneven application or improper incorporation of MOCCASIN MTZ can decrease the level of weed control and/or increase the level of crop injury.
- When applied to any soil with less than 0.5% organic matter.
- Where soil incorporation is deeper than specified.
- When sprayers were not calibrated accurately.
- When heavy rains occur soon after application, especially in poorly drained areas where water may stand for several days.
- When soybeans are planted less than 1-1/2" deep, particularly when MOCCASIN MTZ is applied Pre-emergence.
- Where high soil levels of atrazine are present.
- When using poor quality soybean seed.
- Due to the sensitivity of certain soybean varieties, do not apply MOCCASIN MTZ on varieties that are not confirmed as being tolerant to metribuzin. Consult the seed supplier for information on its tolerance to metribuzin (an active ingredient in MOCCASIN MTZ) before using MOCCASIN MTZ.

#### Restrictions

- Do not graze or feed soybean plants to livestock if they have received a post-emergent treatment. For all other applications, soybean plants may be grazed or fed to livestock 40 days after the last application of MOCCASIN MTZ.
- Do not apply more than the maximum amount of MOCCASIN MTZ indicated in each application type below per year.

#### PRE-PLANT INCORPORATED OR PRE-EMERGENCE APPLICATION FOLLOWED BY OTHER HERBICIDE

MOCCASIN MTZ may be applied pre-plant incorporated or pre-emergence at 1.75-2.67 pt./A on all soils to reduce competition from the weeds listed in the table **WEEDS CONTROLLED OR SUPPRESSED BY MOCCASIN MTZ** section for up to 30-days, and as such can be used as the foundation of an integrated weed management system

#### Restriction

- On soils with pH above 7.0, use the 1.75 pt./A rate only.

#### MOCCASIN MTZ in Conventional Tillage Systems

##### Pre-plant Incorporated Application

Incorporate MOCCASIN MTZ uniformly into the top 2 inches of soil within 14 days before planting using a disk, field cultivator, rolling cultivator, or similar implement. Apply MOCCASIN MTZ pre-plant incorporated if furrow irrigation is used or when a period of dry weather after application is expected. If soybeans are planted on beds, apply and incorporate the tank mixture after bed formation.

##### Pre-emergence Application

Dry weather following pre-emergence application of MOCCASIN MTZ may reduce effectiveness. If weeds emerge, cultivate uniformly with shallow tilling equipment such as a rotary hoe taking extreme care not to damage soybeans.

For information on applying product in fluid or dry fertilizer, refer to **Application in Water or Fluid Fertilizers** or **Impregnation onto Dry Bulk Granular Fertilizers** and **Application of Impregnated Dry Bulk Granular Fertilizer** on this label.

**MOCCASIN MTZ Use Rates - Conventional Tillage Systems (Broadcast Rate)**

Soil Texture	0.5 to 3% Organic Matter (Pt./A)	Over 3% Organic Matter <sup>2</sup> (Pt./A)
<b>COARSE</b> <sup>1</sup> (Loamy sand, sandy loam)	1.75-2.67 <sup>3</sup>	2.67-3.0
<b>MEDIUM</b> (Loam, silt loam, silt, sandy clay, sandy clay loam)	1.75-2.67	2.67-3.56
<b>FINE</b> (Silty clay, silty clay loam <sup>4</sup> , clay, clay loam)	3.0-3.8	3.56-4.56

<sup>1</sup> Do not use on sand soils. On coarse-textured soils, do not use on loamy sand soils with less than 2% organic matter.

<sup>2</sup> For pre-plant incorporated application, use the lower rate.

<sup>3</sup> For Southern and Southeastern states, see section below **In Coarse (Light) Soils**

<sup>4</sup> Silty clay loam soils are transitional soils and may be classified as medium-textured soils in some regions of the U.S. When using MOCCASIN MTZ, treat this soil as "fine-textured."

**Restriction**

- On soils with pH above 7.0, soybean injury caused by the metribuzin in MOCCASIN MTZ may occur at rates higher than 1.75 pt./A. To avoid injury, do not use MOCCASIN MTZ at rates greater than 1.75 pt./A on soils above pH 7.0.

**In Coarse (Light) Soils**

(Only in AL, AR, FL, GA, LA, MS, MO, NC, OK, SC, TN, TX, VA)

MOCCASIN MTZ may be applied as a pre-plant incorporated or pre-emergence application in coarse-textured, low organic matter soils in the states listed above. Refer to the appropriate sections of this label for specific directions on use, precautions, and restrictions.

**Weeds Controlled:** Refer to Table of **WEEDS CONTROLLED AND/OR SUPPRESSED BY MOCCASIN MTZ**.

**MOCCASIN MTZ Pre-emergence Application (Broadcast Rates)**

Soil Texture	Organic Matter	MOCCASIN MTZ (Pt./A)
<b>COARSE</b> (Sand <sup>1</sup> , loamy sand, sandy loam)	0.5% or above	1.75-2.67

<sup>1</sup> Not for use on sand with less than 1% organic matter.

<sup>2</sup> Use the higher rate under heavy weed pressures and/or on soils higher in organic matter. For maximum control of sicklepod, use a pre-emergence application.

**Restriction**

- On soils with pH above 7.0, soybean injury caused by the metribuzin in MOCCASIN MTZ may occur at rates higher than 1.75 pt./A. To avoid injury, do not use this product at rates greater than 1.75 pt./A on soils above pH 7.0.

**Burndown Weed Control**

MOCCASIN MTZ can be used as part of a burndown herbicide program for control of existing vegetation prior to soybean emergence in conservation tillage (reduced-tillage/no-till) systems. Use for burndown is limited to ground applications only. MOCCASIN MTZ may be tank mixed with a variety of other herbicides. In all tank mixtures, the most restrictive of the tank mix product label directions, precautions and restrictions will apply.

**Precautions**

- Observe all precautions and limitations on the labeling of all products used in tank mixtures. Refer to the **Product Information** section of this label for additional information, precautions, and limitations.

## Restrictions

- Do not apply these treatments after crop emergence.
- Burndown applications may only be made by ground.
- Soybean plants or hay treated with MOCCASIN MTZ as a burndown treatment may be grazed or fed to livestock 40 days after application. Follow the most restrictive preharvest interval of all products used in a tank mixture.

## MOCCASIN MTZ Use Rates For Reduced and No-Till Systems

### Pre-plant Surface Application

MOCCASIN MTZ may be used in reduced-till and no-till systems. Applications may be made up to 30 days before planting or after planting, but before soybean emergence. Additional residual herbicides may be tank mixed for increased weed spectrum control. If weeds are present at time of application, burndown herbicides may be added to the tank mixes. Refer to the tank mix product labels for specific rates and use directions.

**Table 16: MOCCASIN MTZ Use Rates for Reduced-Till and No-Till Systems (Broadcast Rates)**

Soil Texture	MOCCASIN MTZ (Pt./A <sup>1</sup> )
<b>COARSE</b> <sup>2</sup> (Loamy sand, sandy loam)	1.75-2.67
<b>MEDIUM</b> (Loam, silt loam, silt, sandy clay, sandy clay loam)	2.67-3.56
<b>FINE</b> (Silty clay, silty clay loam <sup>3</sup> , clay, clay loam)	3.0-4.56

<sup>1</sup> Use low rate range for low residue level or soils with less than 3% organic matter. Use the higher rate range for high residue level or soils with greater than 3% organic matter.

<sup>2</sup> Do not use on sand soils. On coarse-textured soils, do not use on loamy sand soils with less than 2% organic matter.

<sup>3</sup> Silty clay loam soils are transitional soils and may be classified as medium-textured soils in some regions of the U.S. When using MOCCASIN MTZ, treat this soil as "fine-textured."

## MOCCASIN MTZ Sequential Application

An early pre-plant (surface-applied or shallow incorporated) application of MOCCASIN MTZ, followed by a pre-emergence application of MOCCASIN MTZ after planting but before soybean emergence, will provide more consistent control of broadleaf and grass weeds than a single application.

A sequential application will decrease the need for tillage and/or burndown herbicides for the control of existing vegetation before planting, while providing residual control of weeds after planting.

### Application

An early Pre-plant application may be made 15-30 days before planting soybeans. Follow this application with a Pre-emergence overlay application of MOCCASIN MTZ after planting but before crop emergence. Follow directions on this label for sequential applications from 0-14 days before planting.

Where a rate range is specified, use the higher rates (a) in fields with a history of severe weed pressure, (b) when the time between early Pre-plant and Pre-emergence overlay applications approaches the maximum 30 days, (c) when the organic matter content of the soil is over 3%, and/or (d) when heavy crop residues are present on the soil surface.

When weeds exceed 1-1.5 inches in height or diameter at application, use a burndown herbicide, such as Touchdown, Roundup, Gramoxone SL 2.0, or 2,4-D LVE.

**Weeds Controlled:** In addition to weeds controlled by MOCCASIN MTZ alone, the sequential application improves control of the following annual broadleaf weeds: buffalobur, cocklebur, common ragweed, velvetleaf, and sunflower.

### Sequential Application (Broadcast Rates)

Soil Texture <sup>1</sup>	Early Pre-plant Application MOCCASIN MTZ (Pt./A)	- Followed By -	Pre-emergence Overlay Application MOCCASIN MTZ (Pt./A)	Not to Exceed This Total (Pt/A)
<b>COARSE</b> <sup>1</sup> (Sand, loamy sand, sandy loam)	1.75	- followed by -	0.9-1.75	3.0
<b>MEDIUM</b> (Loam, silt loam, sandy clay loam, silt, sandy clay)	1.75-2.67	- followed by -	0.9-3.56	3.8
<b>FINE</b> (Silty clay loam <sup>2</sup> , clay loam, silty clay, clay)	2.67-3.56	- followed by -	0.9-3.56	4.56

<sup>1</sup> On coarse-textured soils, do not use on sand soils with less than 1% organic matter. However, on coarse-textured soils with a calcareous surface area or a pH of 7.5 or higher, do not use on sand soils with less than 2% organic matter, or on loamy sand or sandy loam soils with less than 1% organic matter.

<sup>2</sup> Silty clay loam soils are transitional soils and may be classified as medium-textured soils in some regions of the U.S. When using MOCCASIN MTZ, treat this soil as "fine-textured."

If post-directed applications (limited to certain states) are made in addition to pre-plant applications, the maximum combined total per crop season from all types of applications may not exceed 5.7 pt/A.

### Post-emergence Directed Application (AR, LA, MO – Bootheel only, MS, TN)

MOCCASIN MTZ may be applied post-emergence directed to soybeans to provide residual control of weeds that emerge after crop emergence in the states of Arkansas, Louisiana, Missouri - Bootheel only, Mississippi and Tennessee. Make this application to soybeans in addition to a pre-emergence or pre-plant application of MOCCASIN MTZ according to label directions. The total amount of MOCCASIN MTZ applied must not exceed 3.0 pints per acre per season.

See the table below for MOCCASIN MTZ Post-emergence directed rates according to soil type and organic matter level.

### MOCCASIN MTZ Post-emergence Directed Application (Broadcast Rates)

Soil Texture	Broadcast Rate Per Acre	
	0.5% to less than 3% organic matter	3% organic matter or greater
<b>Coarse</b> Loamy sand, sandy loam (over 2% organic matter)	1.75 pt.	2.35 pt.
<b>Medium</b>	2.35-3.0 pt.	3 pt.
<b>Fine</b>	3 pt.	3 pt.
<b>Mississippi Delta only</b> Silty clay, clay	3 pt.	3 pt.

A post-emergence directed application of MOCCASIN MTZ will provide residual pre-emergence weed control of the weeds listed in the table of **WEEDS CONTROLLED AND/OR SUPPRESSED BY MOCCASIN MTZ**.



Apply in 10 to 20 gallons of water per acre in a 6 to 8 inch band on each side of the row when soybeans are at least 8 inches tall. Do not allow the directed spray to contact more than the lower 1/4 to 1/3 of soybean plants. Soybean leaves contacted by the spray will be killed or severely injured. Do not apply directly to soybeans or serious injury will occur.

#### Precaution

- If heavy rain occurs soon after application, crop injury may result, especially in poorly drained areas where water stands for several days.

#### Post-Directed Application Tank Mixes - Glyphosate Tolerant Soybeans Only

Post-emergence directed applications of MOCCASIN MTZ can be tank mixed with glyphosate such as Touchdown or Roundup brands in glyphosate-tolerant soybeans only. Refer to the tank-mix partner label for use directions, restrictions and limitations. The most restrictive product labeling applies.

#### Restrictions - Post-emergence Directed Applications

- Do not apply more than a total of 3.0 pints per acre per season of MOCCASIN MTZ as a post-directed application; do not apply more than 5.7 pt/A from any combination of applications.
- Do not graze or feed treated soybean forage, hay, or straw to livestock.
- Do not apply within 90 days of soybean harvest.
- MOCCASIN MTZ may not be applied to sandy loam or loamy sand soils with less than 2% organic matter.

## TOMATOES

MOCCASIN MTZ may be applied with ground equipment to seeded and transplanted tomatoes as specified below.

#### Transplanted Applications

##### MOCCASIN MTZ Pre-plant Incorporated Before Transplanting

Soil Texture	MOCCASIN MTZ (Pt./A)
<b>COARSE</b> (Loamy sand, sandy loam)	1.75 – 3.0
<b>MEDIUM</b> (Loam, silt loam, silt, sandy clay, sandy clay loam)	3.0 – 3.6
<b>FINE</b> (Silty clay, silty clay loam, clay, clay loam)	3.0 – 3.6

Apply MOCCASIN MTZ pre-plant incorporated before transplanting, in 10 or more gallons of water/Acre as a broadcast spray. Apply to the soil surface immediately before transplanting.

Incorporate to a depth of 2 to 4 inches with equipment capable of uniformly mixing the chemical into the soil.

#### Established Tomato Post-Directed and Row Middle Applications

MOCCASIN MTZ may be applied post-directed and to row middle in established tomatoes.

Soil Texture	MOCCASIN MTZ (Pt./A)
<b>COARSE</b> (Loamy sand, sandy loam)	1.75 – 3.0
<b>MEDIUM</b> (Loam, silt loam, silt, sandy clay, sandy clay loam)	3.0 – 3.8
<b>FINE</b> (Silty clay, silty clay loam, clay, clay loam)	3.0 – 4.56

The tomato plants must be at least 4 inches tall or 5 to 6 leaf stage at the time of application. Avoid contacting tomato foliage with spray. Apply specified dosage in 20 or more gallons of water per acre as a directed spray.

#### Precautions

- MOCCASIN MTZ may damage transplants that have been weakened by any cause. To prevent damage, plant only healthy transplants.
- For row-middle applications where tomatoes are grown on sandy soils and where high soil moisture conditions can exist (e.g., low binding and high evaporation conditions), as may be found in the States of Florida, Georgia, Maryland, and Virginia, there is potential for crop injury. The risk of injury can be reduced by:
  - Incorporating MOCCASIN MTZ immediately following application
  - Applying MOCCASIN MTZ seven or more days before transplanting (but only after the beds have been formed)
  - Minimizing the application of MOCCASIN MTZ onto the plastic of the bed
  - Any combination of the above

### Restrictions

- Do not make more than one application per season.
- Do not harvest within 90 days of application if the single application rate of this product is MORE than 3.0 pts/A per year.
- Do not harvest within 30 days of application if the single application rate of this product is LESS THAN OR EQUAL to 3.0 pts/A per year
- Do not apply within 3 days after periods of cool, wet or cloudy weather, or crop injury will occur.
- Do not use hot caps on tomatoes within 7 days before or at any time after application of MOCCASIN MTZ.
- Do not use MOCCASIN MTZ on tomatoes in Kern County, California.
- Do not apply by air.
- Do not apply to varieties or cultivars with unknown tolerance to metribuzin or s-metolachlor.

## STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal.

### Pesticide Storage

Store in a cool, dry place and in such a manner as to prevent cross-contamination with other pesticides, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area.

Handle and open container in a manner as to prevent spillage. If container is leaking, invert to prevent leakage. If the container is leaking or material is spilled for any reason or cause, carefully dam up spilled material to prevent runoff. Refer to Precautionary Statements on label for hazards associated with the handling of this material. Do not walk through spilled material. Absorb spilled material with absorbing type compounds and dispose of as directed for pesticides below. In spill or leak incidents, keep unauthorized people away.

### Pesticide Disposal

Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

### Container Handling [less than 5 gallons]

Non-refillable container. Do not reuse or refill this container. Offer for recycling if available. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use and disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**Container Handling [Bulk/Mini-Bulk]**

Refillable container. Refill this container with MOCCASIN MTZ Herbicide only. Do not use this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the person refilling. To clean container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities. If the container is damaged, leaking or obsolete, contact United Phosphorus, Inc. Crop Protection, LLC at 1-800-888-8372.

For minor spills, leaks, etc., follow all precautions indicated on this label and clean up immediately. Take special care to contain spills, leaks, and other accidents to prevent further exposure of facilities and equipment. Absorb spilled product with absorbing materials and dispose of in an approved waste disposal facility. In the event of a major spill, fire, or other emergency, call 1-800-888-8372, day or night.

**IMPORTANT INFORMATION**  
**READ BEFORE USING PRODUCT**

**CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY**

**NOTICE:** Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product reflect the opinion of experts based on field use and tests, and must be followed carefully. It is impossible to eliminate all risks associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of United Phosphorus, Inc. or Seller. Handling, storage, and use of the product by Buyer or User are beyond the control of United Phosphorus, Inc. and Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold United Phosphorus, Inc. and Seller harmless for any claims relating to such factors.

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